

Turnbull - (2)



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R E P O R T

OF

SIX HUNDRED CASES OF DISEASES OF THE EAR.

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DISEASES of the human ear, causing deafness, are more frequent in males than females; this is to be accounted for by the fact, that the male is more exposed to the vicissitudes of the atmosphere. In the record kept by the author of six hundred cases, there were three hundred and seventy-four males, and two hundred and twenty-six females. This differs somewhat from the statistics furnished by European observers, but the slight disproportion in this country between the sexes arises, no doubt, from the present style of head-gear worn by the ladies in the streets during cold weather, exposing the ear to every variety of temperature. Cold, producing catarrh in its various forms, and dentition and its consequences, are the predisposing causes of deafness in childhood, and their effects are seen throughout all the stages of life.

Diseases of the ear are often the result of constitutional disorders, as, for instance, gout, rheumatism, scrofula, tubercles, syphilis, and cancer. Age is also a frequent cause of deafness; and so good an authority as Von Trölsch asserts that not more than one out of three persons, from twenty to forty years of age, possesses good and normal hearing. In our own investigations, we have found that the larger number of persons lose the hearing of one ear, and sometimes of both; this occurs at all ages. About one-fifth of the cases of disease of the ear are hereditary, or communicated from progenitors, families having two, three, four, or even six members deaf and dumb; this is owing to too close consanguinity of parents. Then follow next in order as a cause, the exanthematous

disorders, scarlet fever, measles, and smallpox. The other causes are mumps, quinsy, with acute and chronic inflammation of the throat, nasal passages, and middle ear. There is another form of deafness caused by intermittent, typhoid, and typhus fevers, in which the labyrinth, auditory nerve, and the brain are the parts generally affected, which, for want of a better name, we call nervous deafness.

We shall now take a hasty glance at the table, and give a *résumé* of the treatment which was considered the simplest and the most effectual in their management.

A TABLE¹

Of Six Hundred Cases of Diseases of the Ear, from Dr. Turnbull, occurring during 1868, 1869, and 1870, Howard Hospital and Private Practice.

| | Male. | Female. | Whole No. | Cured. | Improved. | Unimproved. | Died. | Not treated. |
|--|-------|---------|-----------|--------|-----------|-------------|-------|--------------|
| Injured auricle | 1 | 3 | 4 | 4 | ... | ... | ... | ... |
| Foreign body in external canal . . | 2 | 3 | 5 | 5 | ... | ... | ... | ... |
| Eczema auriculæ, acute and chronic . | 6 | 14 | 20 | 12 | 6 | 2 | ... | ... |
| Inspissated cerumen | 65 | 48 | 113 | 73 | 35 | 5 | ... | ... |
| Furunculous abscess meat. ext. . . | 18 | 12 | 30 | 30 | ... | ... | ... | ... |
| Otitis externa | 12 | 18 | 30 | 16 | 12 | 2 | ... | ... |
| Otitis interna, pur. perf. (chronic) . | 2 | 3 | 5 | ... | 2 | 1 | 2 | ... |
| Catarrh, aur. media, acute, perf. . . | 68 | 31 | 99 | 37 | 25 | 36 | 1 | ... |
| “ “ “ chronic | 63 | 48 | 111 | 12 | 51 | 39 | ... | 9 |
| Otitis media, inflam. mastoid process | 18 | 17 | 35 | 10 | 13 | 8 | 4 | ... |
| “ “ chronic, with caries | 6 | 4 | 10 | ... | 2 | 6 | 2 | ... |
| “ “ syphilitica | 9 | 9 | 18 | 2 | 14 | 1 | 1 | ... |
| “ “ with polypi | 9 | 9 | 18 | 14 | 3 | 1 | ... | ... |
| Periostitis, with abscess (cerebral) . | 2 | 4 | 6 | ... | 1 | 2 | 3 | ... |
| Neuralgia, plex. tympani | 2 | 3 | 5 | 2 | 2 | 1 | ... | ... |
| Effusion of blood, memb. tympani . | 2 | 1 | 3 | 3 | ... | ... | ... | ... |
| “ “ middle ear | 1 | 1 | 2 | 1 | ... | 1 | ... | ... |
| “ “ serum “ “ | 3 | 1 | 4 | 2 | 2 | ... | ... | ... |
| Cophosis nervosa, caused by concus- sion, typhoid, scarlet, and bilious fevers, etc. | 5 | 16 | 21 | ... | 2 | 19 | ... | ... |
| Perforation membrana tympani by blow | 3 | 1 | 4 | 3 | 1 | ... | ... | ... |
| Inflammat'n membrana tympani, acute | 2 | 1 | 3 | 1 | 2 | ... | ... | ... |
| “ “ “ chronic | 18 | 19 | 37 | 11 | 13 | 13 | ... | ... |
| “ of Eustachian tube | 7 | 3 | 10 | 3 | 7 | ... | ... | ... |
| Deaf mutes | 4 | 3 | 7 | ... | 1 | 6 | ... | ... |
| | 328 | 272 | 600 | 241 | 194 | 143 | 13 | 9 |

Injured auricle or external ear was treated on general surgical principles, avoiding the cartilages in passing ligatures, and support-

¹ From Clinical Manual of Diseases of the Ear, by L. Turnbull, M. D.; 8vo., with over one hundred illustrations. J. B. Lippincott & Co., Philadelphia, 1871.

ing the stitches by means of a pad of cork, or some other agent. These cases, however, are not numerous.

Foreign bodies in the external canal; these were almost always washed out near to the orifice of the meatus by the syringe, and then removed by a soft silver curette or angular forceps.

Eczema auriculæ, acute and chronic. This troublesome affection was treated in its acute form, by soothing applications of bland fluids, the ear being covered with oil silk; and internal tonics were administered, with alteratives of iron, arsenic, or mercury. In the chronic form, the ointments of the protonitrate of mercury, or the benzoated oxide of zinc, were used. *Internal treatment.* Fowler's solution, or the solution of the bichloride of mercury.

Inspissated cerumen.—Soft cerumen should be broken up and removed by the curette, but if hard it must be softened by a warm solution of bicarbonate of soda in rose water (1 gr. \times f3j), and then removed by the syringe or curette. This will not always relieve the hearing, as attention must be given to the condition of the lining membrane of the auditory canal, membrana tympani, and middle ear; and applications are often necessary of astringents and alteratives, with the use of the air douche of Politzer, or the Eustachian catheter.

By a reference to the table it will be seen that the whole number treated was 113, and of these 73 were cured, that is their hearing was entirely restored; 35 were improved, and in 5 no improvement followed the removal of the apparent cause.

Accumulation of cerumen accompanies a large number of permanent defects in hearing, followed by and being the cause of deafness, producing pressure on the membrana tympani, the delicate bones of the ear, affecting the labyrinth, semicircular canal, and cochlea, which latter, as you know, contains the nerve of hearing.

Furunculous abscess in the external meatus.—These abscesses are most exquisitely painful, slow in development, and form a core which is discharged with difficulty. There is also a plugging up of the canal by a swelling of its tissues. The most successful treatment has been the application of moist warmth to the parts and a free incision into the abscess as soon as its presenting point could be determined.

Otitis externa.—This was supposed to be the most frequent form of affection of the ear, but we now know that it is rather rare, and it will be seen there were only 30 in 600 cases. It extends from the orifice of the auditory canal to the external surface of the membrana tympani, and is apt to follow violence to the ear, foreign

bodies, abscesses, &c. The most successful treatment was proper counter-irritation, by means of small blisters, croton oil, or tincture of iodine, keeping the parts cleansed daily by the use of a mild astringent wash.

Purulent otitis interna, with perforation.—In the acute form this occurs in children, and presents all the symptoms of meningitis, but is distinguished from the latter disease by the labyrinth alone being affected and not the meninges. It is apt to terminate fatally, and is almost always followed by complete deafness. The treatment should be counter-irritation by tincture of iodine, the internal use of the bromides of sodium or potassium, with the tincture of the sesquichloride of iron. It will be noticed that, of five cases, two died, two chronic cases were improved, and one, being unimproved, was sent to a deaf and dumb institution.

Acute aural catarrh of the middle ear, with perforation.—The treatment of this affection consists in keeping the parts cleansed by Clark's or Thudicum's douche, with astringents, tonics, and counter-irritation, with occasional depletion by leeches or small cups.

This is an affection usually amenable to treatment, and to it the term *otorrhœa* is given. Of ninety-nine cases, thirty-seven were cured, that is, the discharge was checked, but the hearing was not restored in all of them to the normal standard. We, however, save the patient's life by checking the discharge and relieving the inflammation.

We now come to the most tedious affection of the human ear, the most frequent cause of deafness, and the most difficult to cure if neglected in its early stage, viz:—

Chronic catarrh of the middle ear, with or without perforation of the membrana tympani. If the membrane be perforated, we can cure the noises and discharge more effectually than if it be thickened and the cavity filled with mucus. Treatment of the open membrana tympani: Apply agents in solution or vapor of iodine to give tone to the parts, removing any excessive discharge by a post-nasal syringe every day, and employing tonics and alteratives, with good diet to build up the system.

If the cavity of the middle ear is closed by thickened membrana tympani accompanied by various kinds of moist or dry sounds with deafness, artificial perforation of the membrane will be found in some cases successful, driving out from the middle ear by the Eustachian catheter or air-douche the accumulation of mucus, pus, etc.; and subsequently we should employ slightly stimulating and

astringent washes of zinc, alum, and now and then a solution of caustic potash or bicarbonate of soda, etc. (a few grains to fʒi of water in the form of spray).

By this and various other means which we cannot enter into in so brief a paper, we may be able to improve our cases; but if not taken in their early stage, the number of cures will be comparatively small, say only twelve out of one hundred and eleven. In the table as shown, fifty-one, or nearly one-half, were improved.

Otitis media, with inflammation of the mastoid cells, is generally the result of pus being retained in the middle ear (from inflammation), which, seeking an outlet by the internal track which it inflames, softens and ultimately ulcerates these soft cells; and unless the inflammation is relieved, or a new outlet made by means of an incision over the mastoid process, the results are always very serious. This in some cases is all the treatment that is necessary; but in more severe cases, the bone was broken down and the outlet made larger by means of a gouge or chisel. In some instances this has been neglected, and, as a consequence, extensive caries ensued which no treatment of ours could cure; still, in some few instances, by removal of part or a whole of the dead bone, the patient's life was saved. Another complication, which in some instances is hereditary, is syphilitic otitis; this requires a protracted and specific treatment, which, as may be seen in our table, is far from being satisfactory, only two being cured of ten cases. In the complication *otitis media with polypi*, the results are more satisfactory, fourteen cases being cured out of eighteen. The treatment was removal by Wilde's snare, or caustic potash, which was continued until the mucous membrane was in a healthy state.

Periostitis, with cerebral abscess, is almost invariably fatal, yet in one case we had all the symptoms in the case, and notwithstanding it recovered.

Neuralgia of the plexus tympani is a very protracted disease. It was treated by sedatives of opium, belladonna, and tonics of nuxvomica with quinine, to give tone and vigor to the nervous system.

Effusion of blood upon the membrana tympani is generally the result of an exudating process, with the development of a glove-like cast of thickened epithelium, and in other cases is the result of a blow or fall on the side of the head. In three cases there was no perforation; in the fourth there was perforation with discharge of serum for some weeks, with attachment of the membrana tympani to the promontory, and entire loss of hearing on one side. In the three cases the blood was removed, and the membrane restored to a state of health.

Effusion of serum into the tympanic cavity or middle ear.—Instead of the usual mucous secretions, there are changes in the layers of the coats of the membrana tympani, causing opacity; or in some instances the membrane is so clear that one-half of it appears of a lighter shade than the lower part, which is of a dark gray. The boundary between the two is marked with a dark blue line; this line, according to Politzer, has the appearance of a black hair lying upon the membrane. The treatment was the air-douche, used every second day, with restoration of the mucous membrane of the nares and pharynx to a healthy condition.

Nervous deafness results from disease or injury of the internal ear, affecting the auditory nerve. The results of treatment are in the main the same as in similar affections of the optic nerve; treatment, galvanic current and the hypodermic use of strychnia or its salts. In sixteen cases, only two were improved.

Perforation of the membrana tympani, by blows or foreign bodies, usually heals readily, if treated with care and without irritating applications. If of long standing, with edges covered with granulations, it is difficult to cure. Use a solution of nitrate of silver xx. to xl. grains to the ounce of water, the parts being cleansed with tepid water, and air introduced by the Eustachian catheter to rid the middle ear of any accumulation.

Acute inflammation of the membrana tympani.—This affection is accompanied with violent pains in the ear, occurring suddenly with more or less fever and suppuration. Meatus dry, membrana tympani much inflamed, sensitive, opaque, dull, flat, and thickened. Prognosis favorable, if treated promptly. Perforation one of the results, but this heals with care and perseverance. Our treatment is perfect rest, free leeching, cupping, or bleeding from the arm, with injections of warm water, glycerine, or opium; and towards the termination, mild astringents, and counter-irritation with the use of the air-douche.

In *chronic inflammation of the membrana tympani* there is no fever, and so little pain that the patient is not aware of his disease except by loss of hearing. There is no secretion of cerumen; the membrana tympani is more or less red, or very opaque, dense, with polypi or granulations upon it. Prognosis not favorable. Local and general treatment. The mucous membrane of the nares, pharynx, and Eustachian tube is in almost every case more or less softened, and secretes abundantly. A portion of tannic acid or pulverized alum is blown in through a rubber tube of the size of a large catheter, which is introduced into the pharyngeal space, in the neighborhood of the Eustachian tube, through the lower nasa

opening. Instillation of solution of sulphate of zinc, or powders of protochloride of mercury are blown upon the membrane, while the patient is given iodide of potassium or bichloride of mercury; the Eustachian catheter or Politzer's air-douche being employed every second or third day. *Inflammation of the Eustachian tube* was treated by the means already spoken of under the head of acute aural catarrh; and the chronic form under that of chronic catarrh of the middle ear, with or without perforation. There are numerous kinds of apparatus, by means of which this portion of the ear is reached, and applications made which will be found in the author's work upon this subject.

The treatment of deaf muteism is a subject of much interest to the physician and philanthropist, and numerous means are now employed to improve their intercourse with their fellows; but we cannot enter upon this subject at this time, but hope to do so at some future meeting of the Society.

